Lesson Topic 1.10

GAS FREE PROCEDURES FOR PAINTING OPERATIONS

INTRODUCTION

- As Gas Free Engineering Personnel you will be required to know the procedure and safety precautions involved during painting operation in a confined space.

ENABLING OBJECTIVES

- Describe gas freeing and safety precautions/procedures to be followed before, during, and after painting operations in accordance with NSTM Chapter 074 Vol. 3, Gas Free Engineering, NSTM Chapter 631 Vol. 1, Preservation of Ships in Service - General, NSTM Chapter 631 Vol. 2, Preservation of Ships in Service - Surface Preparation and Painting, and OPNAVINST 5100.19, series.

PAINTING OPERATIONS

General safety measures

- Potential hazards that exists in all painting operations make a continuing and enforced safety program essential.

General safety measures

- WORKING ENVIROMENT: Shall be studied before painters are sent into any work area.

General safety measures

- Hazards to be considered, include:
  - Poor Ventilation
  - Noxious Fumes
  - High Temperatures
  - Type of material and how applied
  - Type of space

General safety measures

- BUDDY SYSTEM
- COMMUNICATION
- SAFETY OBSERVER

Ventilation requirements / procedures

- Outside air shall be provided at a minimum rate of 1 air change every 3 minutes, but not less than that required to provide a safe, life - supporting atmosphere.

Ventilation requirements / procedures

- Use outside (fresh) air for supply, and exhaust directly to outside air.
- Carefully consider the number, placement and capacity of blowers, number and size of flexible ducts, size and shape of space.

Ventilation requirements / procedures

- Point of exhaust shall be as far as practical from point of supply.
- Place ducts in areas where vapors may collect.

Ventilation requirements / procedures

- Selection of supply or exhaust ventilation shall be based on:
  - Internal configuration of the space
  - Location of openings
  - Blower availability
  - Staging distribution and other considerations

Ventilation requirements / procedures

- Safety Precautions
  - Rope off and post DANGER AREA signs
  - Prohibit smoking, hot work, and open flame in the area.
  - All electrical leads shall be sealed.
  - All equipment requiring grounding shall be grounded.
  - Fire extinguishing equipment shall be in the ready condition.

Protective Equipment

- Respirators: All devices shall be approved by NIOSH and Mining Safety and Health Administration (MSHA).

Protective Equipment

- SUPPLIED AIR RESPIRATORS: Used in closed areas where ventilation cannot be supplied.

Protective Equipment

- Respiratory care
  - Equipment shall be cleaned immediately after use.

Protective Equipment

- Eye Protection
  - Must be worn in areas where there is a possibility of particles, mists or vapors entering eyes

NOTE: Emergency eyewash stations shall b
available at the site or portable eyewash sta
available if fixtures are not installed.

Protective Equipment

- Personnel shall wear adequate clean clothing and gloves to prevent skin contact with painting and cleaning materials.

Gas Free Testing Requirements

- The GFE should conduct the initial test, with monitors conducting the follow-up test(s).

Gas Free Testing Requirements

- Periodic tests shall be made throughout the space being painted, at the exhaust areas, at the air intake areas and in all other areas where explosive vapors may collect.

Gas Free Testing Requirements

- Oxygen test
  - 19.5 - 22 percent
- Explosive test
  - Remain below 10 percent of the LEL
- Toxic tests
  - Remain below their PELs

REVIEW AND SUMMARY

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- Painting Operations

THE END